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some branch of natural science. A work founded "exclusively upon Darwin's facts," must of necessity strike wide of the mark, for many of the most important evidences for evolution are not to be found, or are barely mentioned in Darwin's works. That Darwinism is not the whole doctrine of evolution is perceived clearly enough by Mr. O'Neill, who devotes two or three opening chapters to a lucid exposition of the well known fact that Natural Selection does not explain the origin of characters. This truth has for twelve years been maintained by the editors of this journal, as well as by others, and has been epitomized in the statement that "the origin of the fittest" is the primary problem of evolution, while the "survival of the fittest" (Darwinism) is secondary.

Mr. O'Neill's "Refutation of Darwinism," however, consists principally of a theory of his own, which is an extension of the principle of reversion to all kinds of variation now observed in domesticated animals; he does not concern himself so much with the wild ones, as they are not so fully considered in Darwin's works. In brief, Mr. O'Neill believes that the present condition of animals is one of degradation from a condition of primitive perfection, which has been brought about by the severity of the struggle for existence! The whole theory is a readaptation of modern knowledge to the mediæval idea of the creation and its degradation, consequent on the fall of man.

There are two little difficulties in the way of this hypothesis. Firstly: since the doctrine of evolution is an attempted explanation of the "origin of species," etc., etc., Mr. O'Neill's work is entirely irrelevant, if true. By reversion he only brings us back to species in their pristine completeness or "physiological integrity," as he calls it; the question of how they attained this condition is not considered. It is fair to add that Mr. O'Neill promises us a work on this subject in a foot note on page 435, which will be, if the author's expectations are realized, a wonderful work indeed.

The second difficulty is presented by the science of palæontology. One should look here for the evidences of reversion to older types, should such have been the law of the later creation. But Mr. O'Neill does not concern himself with this subject. When he does so he will find his primitive "physiological integrity" to be a myth; that development is by divergent advances, not by reversion; and that a struggle for existence, not too severe, has been an agent of good, not of evil.

The book is written in a pleasant style and the author is sometimes witty at Mr. Darwin's expense.

HALLEZ'S NATURAL HISTORY OF TURBELLARIAN WORMS.<sup>1</sup>—The first of this series was the elaborate researches on the embryology

<sup>1</sup>*Travaux de l'Institut Zoologique de Lille et de la Station maritime de Wimereux.* Fascicule II. Contributions à l'histoire naturelle des Turbellariés. Par PAUL HALLEZ. Lille, 1879. 4to, pp. 213, 11 plates.

of Bryozoa, by J. Barrois; the present memoir is concerned with the structure of several Turbellarian worms, and is particularly valuable as giving detailed and well illustrated life histories of *Eurylepta auriculata*, *Leptoplana tremellaris*, with fragmentary but still important embryological details on certain Rhabdocœlous worms, with especial reference to the early history of the egg. He describes the lasso cells of some of the worms, remarkably like those of the jelly-fish, and discusses the process of strobilation in a Microstomum.

WESTWOOD'S SYNOPSIS OF URANIIDÆ.<sup>1</sup>—This is a finely illustrated essay on the systematic position of this small but interesting group of moths. By Guenée they were placed at the head of the Phalœnidæ, in which view he was followed by Packard. Prof. Westwood, however, on account of differences in the venation of the wings, and the fact that the larvæ are not loopers, but have sixteen legs instead, or fourteen as with a very few Geometiid larvæ, believes that the group should be placed at a distance from the Geometridæ and amongst the Bombycidæ.

THE ZOOLOGICAL RECORD FOR 1877.<sup>2</sup>—This well known publication of the Zoölogical Record Association, and which has now become almost absolutely indispensable to working naturalists, deserves more than a mere passing notice. Under the heads of twenty-two classes and orders, the progress of Zoölogy for the year past in all departments is reviewed by specialists competent, from their bibliographical attainments and training in their respective departments, to carry out the work satisfactorily. Under each head the contents of the more important papers, general and special, are given with references to their place of publication. The mammalia have been done by Edward Richard Alston; Aves, by Howard Saunders; Reptilia and Pisces, by A. W. E. O'Shaughnessy; Mollusca and Molluscoida, by Prof. Edward von Martens; Crustacea, by Prof. von Martens; Arachnida and Myriopoda, by Rev. O. P. Cambridge; Insecta, general subject, by E. C. Rye, together with Coleoptera, Hymenoptera, Diptera and Rhynchota; Lepidoptera, by W. F. Kirby; Neuroptera and Orthoptera, by R. McLachlan; Vermes, by F. Jeffrey Bell; Echinodermata and Cœlenterata, by C. F. Lütken; Spongida and Protozoa, by Stuart O. Ridley. Most of these names are exceedingly familiar to naturalists and are a sufficient guarantee of the character of the book. It is a work which may be deservedly encour-

<sup>1</sup> *Observations on the Uraniida, a family of Lepidopterous Insects, with a Synopsis of the Family and a Monograph of Coronidia, one of the genera of which it is composed.* By J. O. WESTWOOD. (From the Transactions of the Zoölogical Society, x, Part XII, 1879.) June 1st, 4to, pp. 35, 3 plates.

<sup>2</sup> *The Zoölogical Record for 1877*; being volume fourteenth of the Record of Zoölogical Literature. Edited by Edward Caldwell Rye, F. Z. S., M. E. S., etc., 8vo., pp. 24, 59, 11, 30, 97, 36, 20, 1, 234, 20, 11, 18, 8, 12. London, John Van Voorst, Paternoster Row, 1879.